



Unihose Dispenser Workshop

June 16, 2004

Monitoring and Laboratory Division

Air Resources Board

California Environmental Protection Agency

Agenda

- Introductions
- Background for Unihose Requirement
- Proposed amendments
- Economic Impact
- Cost-Effective Analysis
- Schedule

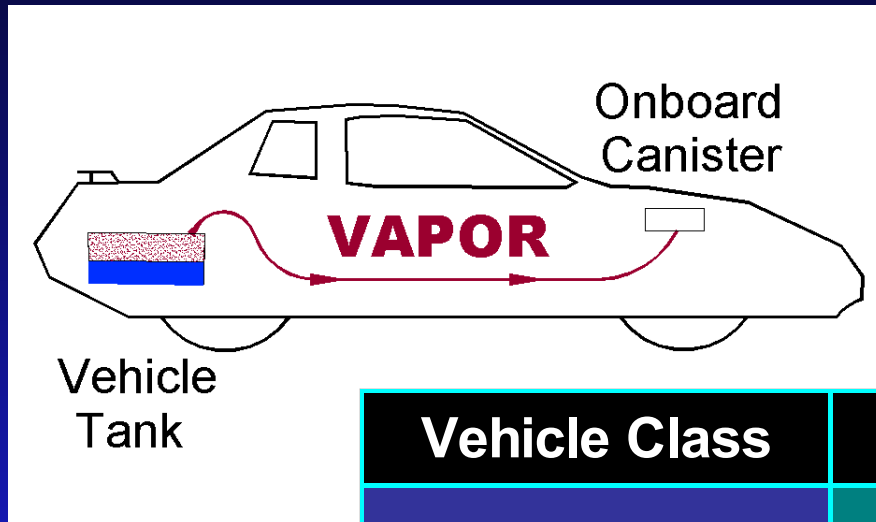
Gasoline Dispenser Configurations: Unihose vs. Six-pack



Unihose Requirement History

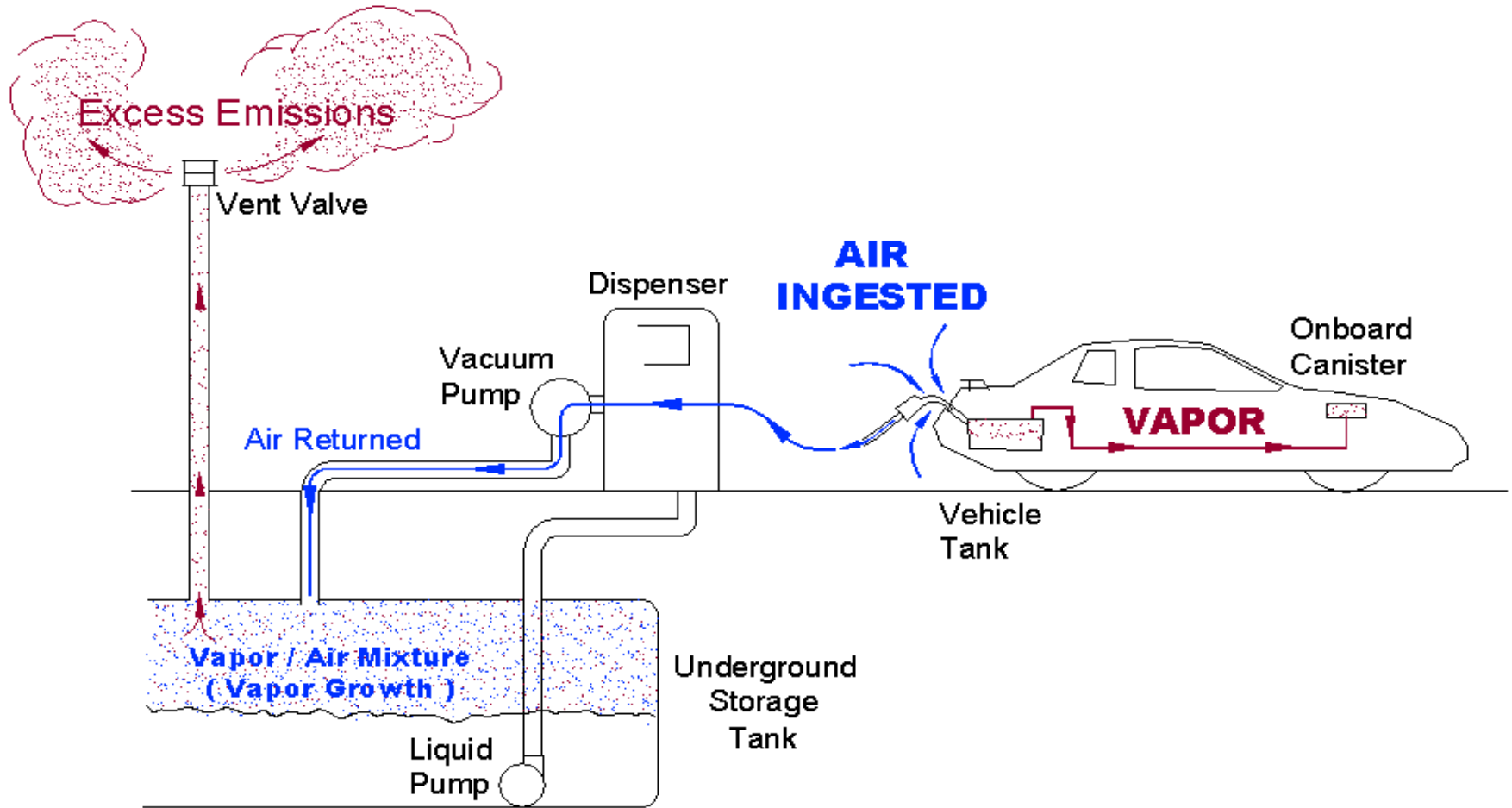
- Feb. 2000 - Proposed for EVR Phase II systems
- Mar. 2000 - Proposal modified at board meeting to exempt existing stations if installed before effective date of CP-201
- Oct. 2003 - unihose effective date clarified to be April 1, 2003 as part of 2002 EVR tech review amendments
- Jan. 2004 - Industry comments on high cost of ORVR compatibility due to unihose trigger

Onboard Refueling Vapor Recovery or "ORVR"



Vehicle Class	40%	80%	100%
Passenger	1998	1999	2000
LD Trucks & MDV (<6000 lbs)	2001	2002	2003
MD Vehicles (6001-8500 lbs)	2004	2005	2006

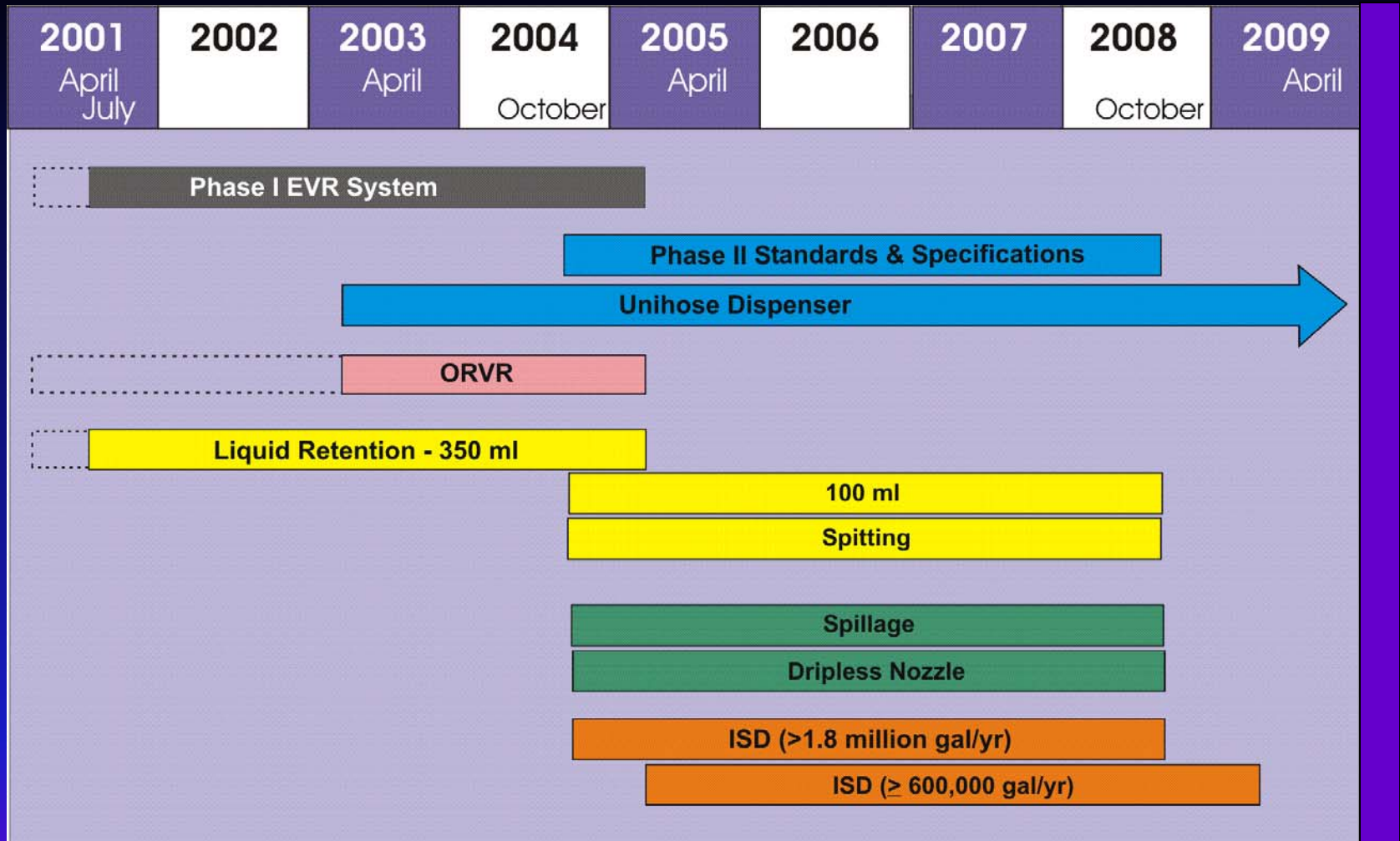
ORVR - Phase II Incompatibility




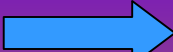


EVR Emission Reductions

		2010 ROG Reductions Statewide, tons/day
Module	Description	
1	Phase I	5.5
2	Phase II	3.1
3	ORVR Compatibility	4.5
4	Liquid Retention	0.2
5	Spillage/Dripless Nozzle	3.9
6	In-Station Diagnostics	8.5
	Total	25.7

Revised EVR Timeline



-  Dotted box: time between start of 4-year clock and operative date
-  Start of solid bar: date required for new or modified facilities (operative date)
-  End of solid bar: date required for existing facilities (installed before start of bar)
-  Not required for dispensers installed before April 2003

March 2004

ORVR Compatible Phase II Systems

Healy (G-70-186 and G-70-191)

nozzle senses ORVR vehicle and turns off
assist vapor pump

Balance (G-70-52, etc)

no forced air ingestion
approval letter 03-04, March 2003

Hirt (G-70-177-AA)

limited to 8 fueling points
approval letter 03-06, March 2003

Unihose Requirement: Proposed Amendment

There shall be only one hose and nozzle for dispensing gasoline on each side of a multi-product dispenser (MPD). This shall not apply to facilities installed prior to April 1, 2003 unless the facility replaces more than 50 percent of the dispensers *or makes a modification, other than the installation of required sensors, that modifies over 50 percent of the vapor piping in the dispensers.* Facility modifications that meet the definition of “major modification” for a Phase II system in D-200 trigger the unihose requirement as the facility is considered a “new installation”. Exception: dispensers which must be replaced due to damage resulting from an accident or vandalism may be replaced with the previously installed type of dispenser.

Gasoline Stations (GDF)

Rank by Volume Fuel Dispensed

Group	GDF 1	GDF 2	GDF 3	GDF 4	GDF 5
Annual Throughput (gal/yr)	Up to 300,000	300,000 to 600,000	600,000 to 1.2 mil	1.2 mil to 2.4 mil	2.4 mil and up
Number of dispensers	2	2	4	5	6
Number of stations (% of total)	458 (4.7)	1,375 (14.1)	4,456 (45.7)	3,052 (31.3)	409 (4.2)

Cost Estimates to Convert Gilbarco to ORVR-compatible System under Existing Regulation*

Starting GDF Type		Gilbarco Unihose		Gilbarco 6-pack			
				Advantage		Non-Advantage	
Ending GDF Type		Unihose, Balance	Unihose, Healy	Unihose, Balance	Unihose, Healy	Unihose, Balance	Unihose, Healy
Model GDF	Number of dispensers						
GDF 1	2	\$3,100	\$7,500	\$6,100	\$10,500	\$28,600	\$30,000
GDF 2	2	\$3,100	\$7,500	\$6,100	\$10,500	\$28,600	\$30,000
GDF 3	4	\$4,700	\$13,500	\$10,700	\$19,500	\$52,200	\$55,000
GDF 4	5	\$5,500	\$16,500	\$13,000	\$24,000	\$64,000	\$67,500
GDF 5	6	\$6,300	\$19,500	\$15,300	\$28,500	\$75,800	\$80,000

*provided by WSPA/CIOMA in January 2004 comments

Cost Estimates to Convert Gilbarco to ORVR-compatible System under Staff's Proposal*

Starting GDF Type		Gilbarco Unihose		Gilbarco 6-pack	
Ending GDF Type		Unihose, Balance	Unihose, Healy	6-pack, Balance	6-pack, Healy
Model GDF	Number of dispensers				
GDF 1	2	\$3,100	\$7,500	\$4,700	\$11,100
GDF 2	2	\$3,100	\$7,500	\$4,700	\$11,100
GDF 3	4	\$4,700	\$13,500	\$7,900	\$20,700
GDF 4	5	\$5,500	\$16,500	\$9,500	\$25,500
GDF 5	6	\$6,300	\$19,500	\$11,100	\$30,300

*provided by WSPA/CIOMA in January 2004 comments

Cost-Effectiveness

- Assume 9,750 stations
- half assist and half balance
- For assist: assume half Gilbarco and half Wayne
- For assist: assume 40% “old 6-pack”, 45% “new 6-pack” and 15% unihose

Cost-Effectiveness Under Existing Regulation

GDF Model	GDF 1	GDF 2	GDF 3	GDF 4	GDF 5
number assist stations (50% of GDF cat total)	229	688	2228	1526	205
ORVR em red (tpd)	0.03	0.24	1.54	2.12	0.57
Total Fixed Cost per station for ORVR Upgrade	\$3,100 to \$28,600	\$3,100 to \$28,600	\$4,700 to \$52,200	\$5,500 to \$64,000	\$6,300 to \$75,800
Annualized Cost for ORVR upgrade (\$/yr/station)	\$2,544	\$2,544	\$4,730	\$5,823	\$6,916
2004 ORVR C.E. (\$/lb)	\$26.60	\$9.98	\$9.37	\$5.74	\$3.40
2004 Overall ORVR C.E. (\$/lb)	\$7.05				

Cost-Effectiveness Under Staff's Proposal

GDF Model	GDF 1	GDF 2	GDF 3	GDF 4	GDF 5
number assist stations (50% of GDF cat total)	229	688	2228	1526	205
ORVR em red (tpd)	0.03	0.24	1.54	2.12	0.57
Total Fixed Cost per station for ORVR Upgrade	\$4,700	\$4,700	\$7,900	\$9,500	\$11,100
Annualized Cost for ORVR upgrade (\$/yr/station)	\$1,531	\$1,531	\$2,818	\$3,461	\$4,104
2004 ORVR C.E. (\$/lb)	\$16.01	\$6.01	\$5.58	\$3.41	\$2.02
Overall 2004 ORVR C.E. (\$/lb)	\$3.99				

Cost-Effectiveness Summary

ORVR Only Cost-Effectiveness

2002 EVR Tech Review	\$1.74
2004 Existing Regulation	\$7.05
2004 Staff's Proposal	\$3.99

EVR Overall Cost-Effectiveness

2002 EVR Tech Review	\$5.24
2004 Staff's Proposal	\$5.65

Rulemaking Schedule

- June 4, 2004 - Release staff proposal
- June 16, 2004 - Workshop
- July 22, 2004 - Board hearing

If approved by Board:

- July 2004 - Submit emergency reg
- August 2004 - Finalize rulemaking

Contact Information

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www.arb.ca.gov/vapor/vapor.htm